

EASA as the European Aviation Safety Agency of the European Commission we like to highlight the following points to OFCOM as they may prevent granting dual use operation in aeronautical frequency band especially in the band from 960 – 1164 MHz. There are at least three major assumptions in the proposals for which we consider that there are not enough validations performed to justify a sound decision making process.

1. As the assessment is performed only for the specific location of operation it seems that the PMSE licence shall be limited to a certain location as well or to implement a technical solution to not transmit on used channels in that location. The proposal is not clear on that aspect. In our understanding PMSE operation is mobile and may even aim to operate on-board aircraft or drones meaning having the capability to change the location fast within one specific PMSE use case. This aspect has not been addressed in the proposal.
2. In 4.24 the assumption is made that an aircraft will not interrogate DME station when outside its coverage area. It is not clear to which coverage area you are referring too in this context especially as the high flying aircraft is expected to communicate with DME stations being 200 NM away from its current position. It is true that that DME will most likely not be receivable on the ground at that aircraft position but this means as well that the aircraft may well, and for good reasons, interrogate such far away DMEs. Consequently the aircraft – PMSE interference is higher than assumed.
3. We agree that the local DME environment and the current aviation frequency use in that band is not changing fast but cannot be considered as stable on a long term as well. There may be the need to deploy further DME stations or to reassign frequencies. Further DMEs are still a main element in the backup strategy for the case of GNSS (GPS) outages when moving more and more to a waypoint based and not navigation aids (DME, VOR, NDB stations) based airspace structure. There are several discussions in the aviation community aiming to introduce further services in this specific frequency bands. Some are mentioned but not analysed other are not mature today but cannot be excluded as well.

We have further identified a safety risk from this shared frequency use when operating such device inside a commercial transport aircraft by passengers as a Portable Electronic Device (PED). Even if the licence may exclude officially such scenario, it is the expectation from the society to use all portable devices in the same way on-board aircraft as they use them at home. All industry standards which are allowing the use of PEDs like EUROCAE ED-130 or RTCA DO-294C base the assessment on the protection of the aeronautical bands and frequency separation. The proposal will invalidate these assumption and may lead to the non-usability of an aircraft DME receiver channel expected to be used for an airport approach operation due to interference from a PMSE transmission in close vicinity to the receiving antenna on the same channel with a corresponding negative influence on the safe aircraft operation. This aspect is missing and is not addressed in the proposal.

Based on the safety risk which is linked to an interference with an airborne DME receiver due to the use of the same frequency by a transmitter in close vicinity we cannot see how the proposed frequency share shall work without causing interference.

Comments linked to specific paragraphs:

To § 1.7: While we agree that the DME application is stable since quite a while we do see several aviation applications coming up which aim to make more use of the

today aviation assigned spectrum by aiming to introduce services in coexistence or in replacement of DME applications.

In § 4.26 the LDACS (L-Band Digital Aeronautical communication System) is mentioned. For that system there is a conceptual design available and operational test have been performed. LDACS is envisioned as one future ground – aircraft data link transport layer to serve the needs for more operational data exchange.

In § 4.27 the RPAS need for control link is identified but today not further defined.

There is further long term thinking how to potentially make better use of the channel capacity for aviation. All this changes will not be introduced tomorrow but may manifest within the next 10 year time frame as some research is currently ongoing worldwide. It has to be further noted that some applications may be developed in other parts of the world but be imported due to the worldwide operation of aircraft and the aim to keep the aviation frequency use harmonised not only through ITU but as well through ICAO coordination. Based on the above, we consider that the long term stability in this band, for which the target industry is aiming for, cannot be considered as granted.

To § 4.7: One aspect missing in the use of the Scanning DME system is the role as back up navigation source for precision navigation applications in case of GPS outage. This leads to the need of system coverage and as well to the need to harmonize channel assignments with neighbouring countries and may lead to the need of local channel re-assignments. Several European countries still mandate the DME system as navigation system to ease Air Traffic Management operation. Channel use coordination is performed through EUROCONTROL and are not managed in isolation by the Civil Aviation Authority of each individual country.

To § 4.8, 4.23: The Designated Operational Coverage area is the one in which the DME use as navigation source needs to be guaranteed for AirTraffic Management (ATM) purposes. This should not be mistaken as the maximum area in which the system can be received especially by high flying aircraft and addressed through the DME station separation criteria.

To § 4.11: Experience shows that already today at high altitude the reception of various stations operating at the same channel is possible and causes limitations in station usability for navigation. Today this is not leading to problems but potential further interference may lead to a situation that DME/DME navigation may not be available as sound navigation solution any more. A typical operational performance of the airborne DME is to bridge a distance of 200 nm under suitable radio propagation conditions. See EUROCAE ED-54 as the applicable airborne DME transceiver standard.

To § 4.15: Channel use coordination is performed through EUROCONTROL and are not managed in isolation by the Civil Aviation Authority of each individual country. We do not understand how the practical coordination is envisaged? Without having a clear vision on the proposed licencing limitations and enforcement measures no assessment is possible.

To § 4.24: Often the DME coverage area is designed to allow a specific approach operation into one or more airports. Within those approach operation which may even

mandate the use of a DME as a necessary navigation facility to be used, the assumption of not using other DMEs may be justified. For the Scan DME operation, which is not aiming for approach into a specific airfield but to determine the aircraft position in en route conditions there is no requirement which DME should be used and each equipment manufacture may have developed its own strategy how to create a good geometrical condition of DME stations for the position determination. The DME channel is not selected independently from the pilot but is paired with the selection of the VHF/MLS navigation frequency. This may lead to inadvertent DME channel selections due to other navigation source needs. Consequently we cannot confirm the assumption that there is no regularly transmission from aircraft outside the designate minimum coverage area of specific DMEs.

To 4.39: Following the general habit of passengers in the assessment of the allowance of Portable Electronic Devices including those ones having transmission function on board aircraft EASA has assumed so far segregation of frequency use for those transmitters. The current approach is infringing this assumption. Experience shows that the community is not respecting limitations like “or ground operations only or for operation in a dedicated area only as this is not matching with their associated needs. We consider that the scenario of starting PMSE operation near one airport with one dedicated DME environment and continuing near another airport having another DME environment is not covered sufficiently within the assessment. Even for ground applications it is not understood how the operational limitation of such device to one specific location is envisaged in our today world demanding mobility. The analysis performed for the 4 places indicates already that channels available at multiple locations is very limited.